

(19) World Intellectual Property
Organization
International Bureau



550155

(43) International Publication Date
7 October 2004 (07.10.2004)

PCT

(10) International Publication Number
WO 2004/085615 A2

- (51) International Patent Classification⁷: C12N (74) Agents: EINHORN, Gregory, P. et al.; Morrison & Foerster LLP, 3811 Valley Centre Drive, Suite 500, San Diego, CA 92130-2332 (US).
- (21) International Application Number:^{*} PCT/US2004/008541 (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (22) International Filing Date: 18 March 2004 (18.03.2004)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
60456,972 20 March 2003 (20.03.2003) US
- (71) Applicant (for all designated States except US): DIVERSA CORPORATION [US/US]; 4955 Directors Place, San Diego, CA 92121 (US).
- (72) Inventors; and
- (73) Inventors/Applicants (for US only): GRAY, Kevin [US/US]; 12119 Eleonore Court, San Diego, CA 92131 (US). GARRETT, James, B. [US/US]; 13605 Sycamore Tree Lane, Poway, CA 92064 (US). ABOUSHADI, Nahla, M. [EG/US]; 3359 Elmwood Way, San Marcos, CA 92069 (US). KNOWLES, Ryan [US/US]; 1342 Tamarisk Grove Drive, Chula Vista, CA 91915 (US). O'DONOGHUE, Eileen [US/US]; 1073 Loring Street, San Diego, CA 92107 (US). WATERS, Elizabeth [US/US]; 4020 Porte de Palmas, #40, San Diego, CA 92122 (US).
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:
— without international search report and to be republished upon receipt of that report
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: GLUCOSIDASES, NUCLEIC ACIDS ENCODING THEM AND METHODS FOR MAKING AND USING THEM

(57) Abstract: The invention is directed to polypeptides having a glucosidase activity, including an alpha-glucosidase activity, polynucleotides encoding the polypeptides, and methods for making and using these polynucleotides and polypeptides. In one aspect, the polypeptides of the invention are used as alpha-glucosidases to catalyze the hydrolysis of starch into sugars, e.g., to convert liquefied starch to glucose. In one aspect, the polypeptides of the invention can catalyze the hydrolysis of both alpha-(1,4) and alpha-(1,6) glucose linkages. In one aspect, the polypeptides of the invention can catalyze the hydrolysis of both malto-oligosaccharides and liquefied starch.

WO 2004/085615 A2